Baton holder

The present invention concerns a baton holder for carrying a baton in a belt, a strap or the like. The invention particularly concerns a baton holder for telescopic batons.

Background

The holders for baton traditionally used by the police force are shaped similar to knife scabbard, suspended from a belt. Commonly the holders comprise two connected parts that are pivotally attached to each other around a substantially horizontal axis, holding the two parts in certain predetermined fixed relative positions (click-stop function). A first part of the baton holder is intended to be attached to the user's belt and will under use be substantially immovably attached to the belt, while the second part, which is designed to envelop parts of the baton, is pivotally attached to said first part.

When, for instance, a policeman/ a guard enters a car, such a conventional baton holder must be turned from a substantially vertical position to a position more horizontal in order to avoid unwanted pressure between the lower end of the baton and the user's thigh. When getting out of the car, the baton holder will maintain the position held in the car unless it is manually returned to the vertical click-stop position. In an emergency situation it is easy to forget such a manual procedure or there is no time available. The immediate risk is therefore that he will lose the baton, especially if he has to run. In addition frequent turning between the different click-stops will lead to an excessive wear of the joint.

There are prior art solutions of carrying a baton horizontally at the belt in all situations. These solutions suffer from one or more practical drawbacks. Primarily they are not designed to ensure a sufficient security against being lost if the user runs or performs other vigorous movements. At the same time it is generally comparatively easy for third persons to "snatch" the baton due to the fact that is not well fastened or secured.

WO 01/30611 A1 describes a baton holder for carrying a baton horizontally. Unwanted axial movement of the baton is safeguarded by the provision of a laterally extending member (6) that through a rotation of the baton, slides into a corresponding transverse recess in the holder thereby locking the member 6 in said recess. The baton holder according to this publication is, however, not useful for batons without such a lateral extending member.

Objective

It is thus an object of the present invention to provide a baton holder that the user does not need to adjust each time he changes from a standing to a sitting position or vice versa.

It is a further object of the invention to provide a baton holder for a baton, particularly for a telescopic baton, that safeguards against the baton being lost during vigorous activity/ movement.

It is a still further object of the invention to provide a baton holder where the baton can be brought from the

holder to a state of readiness in the user's hand very quickly and with the use of only one hand.

The invention

The above mentioned objects are achieved through a baton holder as defined by claim 1.

Preferred embodiments of the invention are disclosed by the dependent claims.

The baton holder according to the invention comprises two holding members attached to the user's belt so that the baton may be carried in a position parallel to the belt at all times. Normally the baton holder is carried on a regular belt but may also be carried on a belt carried diagonally across the user's torso or substantially parallel with an upper arm. The holder may also be arranged on a comparatively rigid support structure intended to be carried on the user's thigh, preferably with its upper end suspended from a regular belt over a connective member. In such a case there will be a joint between the connective member suspended from the belt and the rigid support structure attached to the users thigh. Still another attachment arrangement is achieved by making the baton holder an integral part of a garment such as a waistcoat or the like, e.g. a waistcoat that constitutes part of a uniform or a bullet-proof vest. When attached to such a garment, a comparatively rigid support structure will normally be located within the garment, ensuring a substantially constant distance between the two separate holding members.

As expressed in claim 1 the first holding member is designed to envelop the baton in such a way that its grip end is free. Most telescopic batons do not have a particularly designed "grip", but are intended to be held at one end while the other end is extendable. The entire outermost element of such a baton has a substantially constant diameter and normally a uniform type of surface, not providing any distinct border between its grip end and the rest of the baton.

In the following the baton holder according to the invention is described in more detail by way of an example of an embodiment and with reference to the enclosed drawings, where

Fig. 1 is a perspective view of a first holding member of the baton holder.

Fig. 2 is a side elevation view of the holding member of Fig. 1.

Fig. 3 is a perspective view of the second holding member of the baton holder.

Fig. 4 is a side sectional view of the holding member of Fig. 3.

Fig. 5 is a schematic side view of both the holding members according to Figs. 1-4 attached to a belt and with a baton mounted therewith.

As evident from Fig. 1 and Fig. 2 the first holding member 1 comprises a bracket 2 with two slit shaped openings 3, 4 therethrough for a belt and with a circular opening 5 to surround the baton in the region close to its grip (end). The diameter D of the opening 5 therefore generally corresponds to the outer diameter of the baton. The bracket 2 is not fully closed around the opening 5 but has a gap 6 in one region. The bracket 2 is preferably made in a very durable natural or synthetic rubber material that exhibits a generally high friction contact with the baton and against the user's belt received by opening 3. The opening 4 is intended to receive the free end of the belt outside the belt buckle, and in this opening a high friction contact with the belt is not desired. The opening 4 is therefor generally made somewhat wider than opening 3 and possibly with another surface treatment.

Around the bracket 2 is shown a strap 7 the ends of which are attached to mutually corresponding parts of a snap fastener 8. Other embodiments of the invention may include locking devices other than a snap fastener for the strap 7. The gap 6 in the bracket 2 has, in an unconstrained condition, a width G (gap). The strap 7 is so dimensioned that when the snap fastener is closed, the bracket 2 becomes somewhat compressed, thus the width G is somewhat reduced. This leads to a marginal reduction in the effective diameter D of the circular opening 5. In this way the baton (not shown) becomes effectively held tightly by the bracket 2 that already has a comparatively high frictional contact with the baton due to the inherent properties of the material chosen for this component.

With a convenient choice of material for the bracket 2, the strap 7 may be shaped as a narrow extension of the bracket itself, so that the bracket and the strap may be shaped as one uniform piece. With respect to its manufacture this is simpler and more convenient than making the bracket and strap as separate units to thereafter be attached to each other, even though the latter solution has the advantage that the choice of material may be tailor-made for each of the components.

Figs. 3 and 4 shows the second holding member 10 designed to be carried on the users belt at a distance from the first holding member 1 that is adapted to the passive baton length. By passive baton length is meant the length of e.g. a telescopic baton when pushed completely together. The holding member 10 comprises a bracket 12 that has substantially the same shape as bracket 2. It differs from bracket 2 in that the opening 15 is formed with a diameter adapted to receive a separate bushing 21 with a longitudinal substantially cylindrical opening 22 whose diameter is slightly larger than the diameter of the baton at the end opposite to the grip end. The diameter of the opening 15 will thus normally be larger than the diameter D of opening 5 which in turn will be approximately the size of the diameter of the opening 22. The bracket 12 differs from bracket 2 also by the fact that it does not include any gap corresponding to gap 6 in bracket 2. The bracket 12 may be surrounded by a strap 17 or a reinforcement in a material that, similar to the strap 7, has a high tensile strength and supports the bracket 12 ensuring a thigh enveloping of the bushing 21.

The reinforcement or the strap 17 does not need to be detachable and is therefore not provided with any snap fastener or the like.

The bushing 21 is preferably made from a material that provides a low friction contact with the baton, at least with the chosen diameter of the opening 22 in the bushing. The opening 22 in the bushing 21 may, but need not, extend completely through the bushing 21. An alternative is an opening that narrows to a smaller diameter, so that the end of the baton will rest against a ring shaped shoulder 23, while an opening 24 with a smaller diameter than that of opening 22 ensures that moisture or dirt does not become trapped within the bushing. The bushing 21 is typically made in a hard plastic material that does not become brittle even at low temperatures.

The slit shaped openings 3, 13 in the brackets 2 and 12 respectively will receive the closed part of the user's belt and should provide a high friction contact with the belt in order that the holding member 1 and 10 respectively is held at the same position at all times even when the user is active, e.g. runs, climbs, gets into and out of cars etc. The width of the openings 3, 13 therefor should be of the same dimension as the belt thickness, and the openings should preferably have a rough surface. In addition the material thickness T (see Fig. 2) of the brackets 2, 12 between the openings 3, 13 and the users body contributes to stabilising the holding members.

The openings 4, 14 in the bracket 2 and 12 respectively, shall on the other hand receive the free end of the belt and there is thus no need for high friction contact between belt and bracket in these openings. To the contrary, high friction will represent a practical disadvantage in these latter openings. Therefor the openings 4, 14 generally have a width somewhat larger than the belt thickness, and the surface of the brackets within openings 4, 14 may be treated in a way that makes them smoother and less rough.

Figure 5 shows schematically how the baton holder, consisting of holding members 1 and 10, may be attached to a belt 31 with a baton 32 mounted to the holder. The baton 32 has a grip end 33 that is available and an end 34 that is at least partially covered by the bushing 21 of the holding member 10. The baton will normally be telescopically extendable at the end 34. From the belt buckle 35 and behind the baton the belt overlap, with the free end of the belt being received by the slit shaped opening 4 in bracket 2 and if necessary also by the slit shaped opening 14 in bracket 12. While the holding member 1 of Fig. 5 is shown with the free end of the strap 7 pointing upwards, the opposite orientation of holding member 1 is also possible.

The illustrated embodiments of the invention, intending to be attached to a common belt, assumes at least one and preferably two slit shaped openings (3, 4 and 13 , 14 respectively) in the brackets. For other

embodiments, e.g. by which the holder is mounted to a rigid support structure, the brackets may be attached to the structure by way of other means than such slit shaped openings.

For a right handed user the baton could lay at the left side of the body. When the baton is to be lifted out, the user will let e.g. the four outermost fingers of his right hand bend around the grip end 33 while the thumb on same hand is positioned at the end of the strap 7 above the snap-fastener 8. The snap-fastener may be released with the thumb while the grip end of the baton is moved out of the holding member 1 through the gap 6 in bracket 2. By simultaneously pulling the arm somewhat to the right, the end 34 of the baton is released from the bushing 21 and is thereby completely free of the holding member 10. When the end 34 of the baton has become free of the holding member 10, the baton may rapidly be swung so that its end 34 points downwards. In combination the centrifugal force from the swing movement and gravity will lead to, in the case of a telescopic baton, the baton extending to its full length. The entire operation from a passive state in the baton holder to an active position may take place in only one second.

For a left handed user, the same holding members are preferably mounted to the right of the belt buckle. With regular orientation of the belt, there is then no need for the openings 4 and 14 in the brackets. The operation will otherwise be similar with this positioning of the baton holder as the one described above.

Instead of positioning both holding members at the same side of the belt buckle, it is further possible to attach one holding member to the right of the belt buckle and the other holding member to its left, in which case the baton in its passive position rests substantially in front of the belt buckle. It is also an option to carry the baton in a diagonal belt or strap across the users chest or in a kind of shoulder holster, that with respect to the language of this patent specification is to be considered as a belt. The first holding member will anyhow be the one closest to the grip end of the baton, i.e. the end of the baton that is intended to be held when the baton is to be used.

Instead of a snap fastener 8 the locking mechanism may be a miniature bar (not shown), e.g. 0.5 cm high and somewhat extended at its outer end, that is attached to and extends out from the part of the strap that is fixed to the bracket 2 under the gap 6. The free end of the strap 7 that extends over the gap 6 from above is provided with a hole or a slit that fits snugly over the said extension on the miniature bar.

Even though the holding members 1 and 10 are consistently referred to as separate holding members and normally will be manufactured as such, it will also be within the scope of the invention for them to be manufactured with a connection that holds them at a fixed position from each other, whereby the baton holder is constituted by one single element instead of two. It is also an option to use one wide, stable bracket to be attached to a belt or a strap, said bracket being able to hold both the first and the second

holding member in a manner that makes it impossible for the holding members to be displaced relative to each other.

With respect to manufacturing technicalities, it is convenient to manufacture the baton holder as two separate elements and have the users belt ensure that they function as one unit. A minor change of the distance between the two holding members will not adversely impact on its use, partly due to the fact that the baton end 34 may frictionless move some centimetres back and forth within the bushing 21 with no risk of the baton slipping out of the holding member. As a second holding member 10, a baton holder according to prior art with click-stop positions may also be used, although it does not constitute an optimal solution.

Use of separate holding members arranged at a certain distance from each other, gives a particularly stable support for the baton, but it is possible, with separate holding members, to have these positioned immediately adjacent one another.

At the holding member 1 the baton will neither be able to rotate or to move axially, but will remain in position until the locking mechanism / the snap fastener is opened. Even following an unintentional opening of the locking mechanism (the snap-fastener 8) the baton will not, without assistance from a hand, be able to pass out through gap 6, as this in its unconstrained condition is significantly less than the diameter of the baton.

The holding member 10 shown in Figs. 3 and 4 appears as made up of two components, bracket 12 and bushing 21, while also the bracket may be enveloped by a third component in the form of a strap 17 or other reinforcing element. It is, however, fully consistent with the present invention that the entire holding member 10 is manufactured from one piece of a homogenous material. In such a case particular efforts may be required to ensure the desired low frictional contact with the baton and desired high frictional contact with the belt. This challenge may be met through a combination of optimal dimensioning of the openings 13 and 22 respectively and possibly by way of a surface treatment in one or both of said openings. The holding member 10 may also comprise more than the three shown components.

The holding member 1 shown in Figs 1 and 2 may also be composed of more or fewer components than the ones shown in the drawings without departing from the scope of the invention.

Even though the invention for practical purposes is described in relation to a baton, it will be evident to a skilled artisan that it could be adapted to other equipment with similar shape and dimension, such as battery operated flashlights or the like.